

IN THE CLAIMS

1. (currently amended) ~~External~~ An external electrode for a multilayer piezoceramic actuator comprising: actuator, ~~characterised in that the external electrode (23, 24; 26; 27) consists of at least one~~ conductive material layer layers (19) and at least one nonconductive material layers (22, 25) arranged alternately above one another, ~~in that wherein~~ one of ~~the~~ two outlying conductive material layers (19) is connected to ~~the~~ base metallization (11) of the actuator (1) and the other is connected to a ~~the~~ voltage supply lead (6), and ~~in that the~~ wherein said at least two conductive material layers (19) are electrically connected to one another.
2. (currently amended) An external ~~External~~ electrode according to Claim 1, characterised in that it consists of at least two layers of a conductive material (19) and a layer of a nonconductive material (22, 25) arranged between them.
3. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~or 2~~, ~~characterised in that~~ wherein each conductive material layer (19) consists of a metal foil.
4. (currently amended) An external ~~External~~ electrode according to Claim 3, ~~characterised in that~~ wherein the foil (19) has a thickness of about 30 µm to about 200 µm, preferably between 50 µm and 100 µm.
5. (currently amended) An external ~~External~~ electrode according to Claim 3 ~~or 4~~, ~~characterised in that~~ wherein the foil (19) has a spatial structure, and in that the layer can therefore attain up to three times the thickness of the foil.
6. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~or 2~~, ~~characterised in that~~ wherein the conductive material layers (19) are three-dimensionally structured.
7. (currently amended) An external ~~External~~ electrode according to Claim 6, ~~characterised in that~~ wherein the conductive material layers (19) ~~consist of~~ comprises a metal gauze, a metal ~~or fabric, of a~~ metal mesh or ~~of a~~ metal foam.

8. (currently amended) An external ~~External~~ electrode according to Claim 7, ~~characterised in that~~ wherein the gauzes, fabrics or meshes of the conductive material layers (19) have a thickness of about 100 μm to 200 μm .
9. (currently amended) An external ~~External~~ electrode according to Claim 7 ~~or 8~~, ~~wherein characterised in that~~ the lattice widths of the fabrics or meshes of the conductive material layers (19) are between about 100 μm and 200 μm , and the wire diameter is between about 50 μm and 100 μm .
10. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 9~~, ~~characterised in that~~ wherein the nonconductive material (22, 25) is comprises a resilient plastic ~~plastic, preferably a thermoplastic such as polytetrafluoroethylene (PTFE) or polyimide.~~
11. (currently amended) An external ~~External~~ electrode according to Claim 10, ~~characterised in that~~ wherein the nonconductive material (22, 25) is a plastic, in the form of films with a thickness of about 10 μm to about 100 μm .
12. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 11~~, ~~characterised in that~~ wherein the conductive material (19) is coated with the nonconductive material (22, 25).
13. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 12~~, ~~characterised in that~~ wherein the individual conductive material layers (19) consist of different metallic materials.
14. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 13~~, ~~characterised in that~~ wherein the conductive material (19), at least of the layer which is soldered to the actuator material, has a coefficient of thermal expansion matched to the ceramic material of the actuator (1).
15. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 14~~, ~~characterised in that~~ wherein it is produced by colaminating the conductive material layers (19) and the nonconductive material layers (22, 25).

16. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 15, characterised in that wherein~~ the electrical connection between the conductive material layers (19) is established by via-contacts or contacts leading around.

17. (currently amended) An external ~~External~~ electrode according to Claim 16, ~~characterised in that wherein~~ the conductive material layers (19) are respectively connected to one another on their long sides.

18. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 14, characterised in that wherein~~ the conductive material (19) is folded into a meandering or spiral shape, and in that the nonconductive material (22, 25) is respectively arranged between two superimposed layers of the conductive material (19).

19. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 14, characterised in that wherein~~ the conductive material (19) is bent into a C-shape, in that it encloses the nonconductive material layer (22), and in that the bent sides are connected to the base metallization (11) of the actuator (1).

20. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 19, characterised in that wherein~~ the conductive material (19) consists of a copper or silver alloy.

21. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 19, characterised in that wherein~~ the conductive material (19) consists of an iron-nickel alloy or an iron-nickel-cobalt alloy.

22. (currently amended) An external ~~External~~ electrode according to Claim 1 ~~one of Claims 1 to 21, characterised in that wherein~~ it is connected to the base metallization (11) of the actuator (1) by soldering or by bonding with a conductive adhesive.

23. (new) An external electrode according to Claim 2, characterised in that each conductive material layer consists of a metal foil.

24. (new) An external electrode according to Claim 4, characterised in that the foil has a spatial structure, and in that the layer can therefore attain up to three times the thickness of the foil.

25. (new) An external electrode according to Claim 2, characterised in that the conductive material layers are three-dimensionally structured.

26. (new) An external electrode according to Claim 8, characterised in that the lattice widths of the fabrics or meshes of the conductive material layers are between about 100 μm and 200 μm , and the wire diameter is between about 50 μm and 100 μm .

27. (new) An external electrode according to claim 10, wherein said plastic is thermoplastic.

28. (new) An external electrode according to claim 27, wherein said thermoplastic is polytetrafluoroethylene (PTFE) or polyimide.